

REMARKS

Claims 1 through 8 and 10 through 18 are pending in this application. Claims 1 through 8 and 10 through 11 have been rejected. Claims 1 through 8 and 10 through 11 have been amended to enhance the clarity and brevity of the claims and to better express the Applicant's invention. Claim 9 is canceled without prejudice or disclaimer. Claims 12 through 18 are added to better express the Client's invention. No new matter has been added and no new search is required.

The Examiner has objected to the drawings and requested that Figs. 1 through 3 be designated "Prior Art". The Applicant has labeled Figs. 1 through 3 as "prior art". As such, the Applicant requests that the Examiner withdraw the objections to the drawings.

Claims 1 through 5 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Applicant has amended claims 1 through 5 to overcome the Examiner's rejection. As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §112 rejections from Claims 1 through 5.

Claim 1 stands rejected under 35 U.S.C. §102(e), as being anticipated by U.S. Patent No. 5,508,860 to Takagi entitled *Disk Drive Design Having Reduced Height and Improved Means for Electrical Connections*. The Examiner stated that "Takagi et al. '860 discloses a hard disk drive comprising; a head/disk assembly 1, a printed circuit board assembly 3; a first connector 13 having a plurality of connector pins electrically connecting the head/disk assembly to the printed circuit

board assembly; a second connector 14 having a second plurality of connector pins electrically connecting the head/disk assembly to the printed circuit board assembly; and the second plurality of connector pins being automatically connected when the first connector is connected." The Applicant traverses the Examiner's rejection for the following reasons.

In the Takagi '860 device, the first connector 13 and second connector 14, as identified by the Examiner, actually engage each other. As such, first connector 13 and second connector 14, taken together, only comprise one connector between the disk assembly and the printed circuit board assembly. Claim 1, as originally filed, details two separate connectors between the printed circuit board and the disk assembly.

Claim 1 was amended to further emphasize the differences between the Applicant's invention and the art cited by the Examiner. As amended, Claim 1 makes it clear that there is a first connector that comprises both a "first connector" and a "second connector" and that there is a second connector that comprises both a "plurality of contacts" and a "plurality of terminals". Newly amended Claim 1 also specifies that the second connector automatically engages when the first connector is engaged. As such, newly amended Claim 1 contains may elements not recited in Takagi '860. As the Examiner may appreciate, for an anticipation rejection under 35 U.S.C. §102(b) to be sustained on appeal, all of the elements must be found in exactly the same situation and united in the same way in a single art reference. Every element must be literally present, arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1382, 165 USPQ2d 1913, 1920 (CAFC 1989). The

identical invention must be shown in as complete detail as is contained in the patent claim. *Id.*, "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970), and MPEP §2143.03. As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §102 rejection of Claim 1.

Claim 1 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus*. The Examiner Stated that, "Morehouse et al. '049 discloses a hard disk drive comprising; a head/disk assembly 300, a printed circuit board assembly 306; a first connector 331 having a first plurality of connector pins electrically connecting the head/disk assembly to the printed circuit board assembly; a second connector 331 having a second plurality of connector pins electrically connecting the head/disk assembly to the printed circuit board assembly; and the second plurality of connector pins being automatically connected when the first connector is connected." The Applicant has amended Claim 1 to overcome the Examiner's rejection. Claim 1 has been amended to detail the types of connectors used by Applicant's invention. In specific, Claim 1 details the use of "terminals", that protrude through a printed circuit board assembly, that abut "contacts" that are attached to a printed circuit board. As such, Applicant's invention is structurally and functionally different from the Morehouse '049 device. Contrary to the Examiner's assertion that a second connector is automatically attached when a first connector is attached in Morehouse '049, to engage both connectors the printed circuit board and disk assembly must be precisely aligned. The Applicant's invention is advantageous because the

combination terminal and contact connector requires less precise alignment between the printed circuit board assembly and the disk assembly. Furthermore, Applicant's invention is advantageous because of the reduced amount of force that needs to be exerted to secure the printed circuit board assembly to the disk assembly. Morehouse '049 requires more force to assemble the printed circuit board assembly and disk assembly than the Applicant's device because both of the connectors are pin and hole devices. Thus each pin and hole connector requires a certain amount of force to engage the pins with the corresponding holes. Applicant's device only requires the use of one connector that may be of a pin and hole type. The second connector requires no additional force to engage because the terminals need only abut the contacts on the disk assembly. Thus, the assembly of Applicant's invention can be done with a reduced amount of force. This allows more delicate circuitry to be used and reduces the chances of defects caused by the higher amount of assembly force required by Morehouse '049.

In addition, Morehouse '049 does not disclose all of the elements of Claim 1, as newly amended. Furthermore, it has been established that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. Under 35 U.S.C. §103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). The mere fact that the prior art could be modified in the manner proposed by the Examiner would not have made the modification obvious unless the prior art suggested the desirability of the modification. *Ex parte*

Dussand, 7 USPQ2d 1818, 1820 (1988). Both the suggestion and the expectation of success must be found in the prior art, not in Applicant's disclosure. *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d 1529, 1531 (CAFC 1988). As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from claim 1.

Claim 2 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus* in light of U.S. Patent No. 5,199,884 to Kaufman entitled *Blind Mating Miniature Connector*. The Applicant amended Claim 2 to overcome the Examiner's rejection. Claim 2 is allowable for all of the reasons detailed in the remarks relating to Claim 1. In addition, Claim 2 adds the limitation of, "said terminals being formed of an elastic material." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from Claim 2.

Claim 3 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus* in light of U.S. Patent No. 5,199,884 to Kaufman entitled *Blind Mating Miniature Connector*. The Applicant amended Claim 3 to overcome the Examiner's rejection. Claim 3 is allowable for all of the reasons detailed in the remarks relating to Claim 1. In addition, Claim 3 adds the limitation of, "said printed circuit board attached to said

disk assembly being flexible." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from Claim 3.

Claim 4 stands rejected under 35 U.S.C. §102(e), as being anticipated by U.S. Patent No. 5,508,860 to Takagi entitled *Disk Drive Design Having Reduced Height and Improved Means for Electrical Connections*. The Applicant amended claim 4 to overcome the Examiner's rejection. Claim 4 is allowable for all of the reasons detailed in the remarks relating to Claim 1. In addition, Claim 4 adds the limitation of, "said terminals being P-shaped." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §102 rejection of Claim 4.

Claim 4 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus*. The Applicant amended Claim 4 to overcome the Examiner's rejection. Claim 4 is allowable for all of the reasons detailed in the remarks relating to Claim 1. In addition, Claim 4 adds the limitation of, "said terminals being P-shaped." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from Claim 4.

Claim 5 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus* in light of drawings Figs. 1 through 3. The Applicant amended Claim 5 to overcome the Examiner's rejection. Claim 5 is allowable for all of

the reasons detailed in the remarks relating to Claim 1. In addition, Claim 5 adds the limitation of, "said terminals being C-shaped." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from Claim 5.

Claim 6 stands rejected under 35 U.S.C. §102(e), as being anticipated by U.S. Patent No. 5,508,860 to Takagi entitled *Disk Drive Design Having Reduced Height and Improved Means for Electrical Connections*. The Examiner stated that "Takagi et al. '860 discloses a hard disk drive comprising; a head/disk assembly 1, a printed circuit board assembly 3; a first connector 13 having a plurality of connector pins electrically connecting the head/disk assembly to the printed circuit board assembly; a second connector 14 having a second plurality of connector pins electrically connecting the head/disk assembly to the printed circuit board assembly; and the second plurality of connector pins being automatically connected when the first connector is connected." The Applicant traverses the Examiner's rejection for the following reasons.

In the Takagi '860 device, the first connector 13 and second connector 14, as identified by the Examiner, actually engage each other. As such, first connector 13 and second connector 14, taken together, only comprise one connector between the disk assembly and the printed circuit board assembly. Claim 6, as originally filed, details two separate connectors between the printed circuit board and the disk assembly.

Claim 6 was amended to further emphasize the differences between the Applicant's invention and the art cited by the Examiner. As amended, Claim 1 makes it clear that there is a first connector that comprises both a "first connector" and a "second connector" and that there is a second connector that comprises both a "plurality of contacts" and a "plurality of terminals". Newly amended Claim 6 also specifies that the second connector automatically engages when the first connector is engaged. As such, newly amended Claim 6 contains many elements not recited in Takagi '860. As the Examiner may appreciate, for an anticipation rejection under 35 U.S.C. §102(b) to be sustained on appeal, all of the elements must be found in exactly the same situation and united in the same way in a single art reference. Every element must be literally present, arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1382, 165 USPQ2d 1913, 1920 (CAFC 1989). The identical invention must be shown in as complete detail as is contained in the patent claim. *Id.*, "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970), and MPEP §2143.03. As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §102 rejection of Claim 6.

Claim 6 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus*. The Examiner Stated that, "Morehouse et al. '049 discloses a hard disk drive comprising; a head/disk assembly 300, a printed circuit board assembly 306; a first connector 331 having a first plurality of connector pins electrically connecting the head/disk assembly to the printed circuit board assembly; a second connector 331 having a

second plurality of connector pins electrically connecting the head/disk assembly to the printed circuit board assembly; and the second plurality of connector pins being automatically connected when the first connector is connected." The Applicant has amended Claim 6 to overcome the Examiner's rejection. Claim 6 has been amended to detail the types of connectors used by Applicant's invention. In specific, Claim 6 details the use of "terminals", that protrude through a printed circuit board assembly, that abut "contacts" that are attached to a printed circuit board. As such, Applicant's invention is structurally and functionally different from the Morehouse '049 device. Contrary to the Examiner's assertion that a second connector is automatically attached when a first connector is attached in Morehouse '049, to engage both connectors the printed circuit board and disk assembly must be precisely aligned. The Applicant's invention is advantageous because the combination terminal and contact connector requires less precise alignment between the printed circuit board assembly and the disk assembly. Furthermore, Applicant's invention is advantageous because of the reduced amount of force that needs to be exerted to secure the printed circuit board assembly to the disk assembly. Morehouse '049 requires more force to assemble the printed circuit board assembly and disk assembly than the Applicant's device because both of the connectors are pin and hole devices. Thus each pin and hole connector requires a certain amount of force to engage the pins with the corresponding holes. Applicant's device only requires the use of one connector that may be of a pin and hole type. The second connector requires no additional force to engage because the terminals need only abut the contacts on the disk assembly. Thus, the assembly of Applicant's invention can be done with a reduced amount of force. This allows more delicate circuitry to be used

and reduces the chances of defects caused by the higher amount of assembly force required by Morehouse '049.

In addition, Morehouse '049 does not disclose all of the elements of Claim 6, as newly amended. Furthermore, it has been established that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. Under 35 U.S.C. §103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). The mere fact that the prior art could be modified in the manner proposed by the Examiner would not have made the modification obvious unless the prior art suggested the desirability of the modification. *Ex parte Dussand*, 7 USPQ2d 1818, 1820 (1988). Both the suggestion and the expectation of success must be found in the prior art, not in Applicant's disclosure. *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ 2d 1529, 1531 (CAFC 1988). As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from claim 6.

Claim 7 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus* in light of U.S. Patent No. 5,199,884 to Kaufman entitled *Blind Mating Miniature Connector*. The Applicant amended Claim 7 to overcome the Examiner's rejection. Claim 7 is allowable for all of the reasons detailed in the remarks relating to Claim 6. In addition, Claim 7 adds the limitation of, "said terminals being constructed of a

flexible material." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from Claim 7.

Claim 8 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus* in light of U.S. Patent No. 5,199,884 to Kaufman entitled *Blind Mating Miniature Connector*. The Applicant amended Claim 8 to overcome the Examiner's rejection. Claim 8 is allowable for all of the reasons detailed in the remarks relating to Claims 6 and 7. In addition, Claim 8 adds the limitation of, "said printed circuit board on said disk assembly being flexible." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from Claim 8.

Claim 10 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus* in light of U.S. Patent No. 5,199,884 to Kaufman entitled *Blind Mating Miniature Connector*. The Applicant amended Claim 10 to overcome the Examiner's rejection. Claim 10 is allowable for all of the reasons detailed in the remarks relating to Claims 6 and 7. In addition, Claim 10 adds the limitation of, "said terminals being P-shaped." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from Claim 10.

Claim 11 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,768,049 to Morehouse entitled *Disk Drive Apparatus* in light of U.S. Patent No. 5,199,884 to

Kaufman entitled *Blind Mating Miniature Connector*. The Applicant amended Claim 11 to overcome the Examiner's rejection. Claim 11 is allowable for all of the reasons detailed in the remarks relating to Claims 6 and 7. In addition, Claim 11 adds the limitation of, "said terminals being C-shaped." As such, the Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection from Claim 11.

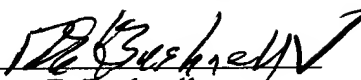
Accordingly, in view of the reasons detailed above, claims 1 through 8, 10, and 11, as newly amended, are patentable and are in condition for allowance. Accordingly, the applicant respectfully requests that the above cited rejections be withdrawn.

No fee is incurred by the foregoing amendments.

Should a Petition for extension of time be required with the filing of this Amendment, the Commissioner is kindly requested to treat this paragraph as such a request and is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of the incurred fee if a check of the requisite amount is not enclosed.

In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unresolved, the Examiner is requested to telephone the Applicant's attorney.

Respectfully submitted,



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